Already overrepresented in the Top 10% by a factor of $1 \times 22$, the share increases significantly to reach a factor of $2 \times 4$ in the Top 1% and an even higher value of $3 \times 2$ for the Top 0.1% compared to the Austrian population share in the Eurozone.

4 Results

Our empirical application focuses on the propensity to get rich through the two main drivers of wealth accumulation: self-made income and inheritances. We have particular interest in the country-specific differences of the marginal contributions to household wealth in the Eurozone. Such differences could be motivated by a number of institutional settings, for example differing tax levels on both income sources or labor market characteristics and housing preferences which may facilitate saving and thus wealth accumulation.

As the above-mentioned literature has shown, inheritances can be a significant component of wealth accrual. Our empirical strategy will therefore rest on two pillars. First, we estimate logit regressions using country fixed-effects and dummies which indicate whether a household has received inheritances. This allows us to depict the overall importance of inheritances, for now leaving aside the issue that regressions on the mean may be a bad approximation to the overall distribution of net wealth. Second, we expand our regression design and estimate structural quantile regressions. These are conducted separately for each country with further control variables for other household characteristics. This method especially emphasizes the differing role of income and inheritances at various points of the distribution.

4.1 Disproportionately Rich: Logit Evidence

Using logit regressions we estimate a model of the form

$$ I_{\text{top}X} = \beta_0 + \beta_1 \text{Country} + \beta_2 \text{Bequest} > 0, $$

where an indicator variable $I_{\text{top}X}$, which takes on the value of zero and one if a household belongs to the Top $X\%$ of the Eurozone’s wealth distribution, is related to country dummies and an indicator that captures whether the household has received an inheritance. Based on these outcomes we derive the estimated share of households in the Top $X\%$ as predictions based on our logit regression and compare it to an equal representation of all countries at the top end of the wealth distribution.

Figure 2 presents the results for this exercise for the Top 10%, Top 5% and Top 1% of the Eurozone net wealth distribution. The black line of unity marks the position where the number of households in the top shares corresponds exactly to a country’s population share in the Eurozone. Values above the black line denote overrepresentation while values below the black line display countries which are underrepresented in the top wealth shares. Stars indicate the actual estimated
prop
ortion, unconditional on having received an inheritance. For example, Germany is slightly underrepresented in the Top 10% (left panel), with an estimated value of \(0.9\) times its population share. Even in the Top 5%, there are still less German households than we would expect due to the population share, however the picture changes for the Top 1%, where German households are overrepresented.

These results of the logit estimation correspond to the light grey bars in Figure 1. Many countries are underrepresented – Greece, Netherlands, Portugal – or even represented not at all the further we move up the distributional ladder. Almost no Greek and Slovenian households are among the top wealthy, and there is not a single Slovakian household in the Top 1% share.

![Figure 2: Logit Regression with Country and Inheritance Effects](image)

To better understand the processes at work here, we further include a dummy variable indicating whether a household has inherited. Again, the findings are reported in Figure 2. Triangles depict the share of households that have inherited and circles indicate the proportion of non-heir households. A first observation follows from the descriptive statistics in Table 1: only a minority of households have already inherited at the time of the survey interview, so that the unconditional estimate is closer to the estimate for non-heir households for most countries. Furthermore, the results indicate that inheritances significantly improve a household’s position in the wealth distribution. While households from Austria, Germany, Spain, and France are on average not or only slightly overrepresented in the Top 10%, this picture drastically changes for heir households. In most of these cases, the unconditional effect is a mixture of non-heir households which seem to appear more sparsely than an equal share would suggest, and heir households that are overrepresented by factors of two to three.

Additionally, this picture intensifies the further we move up in the distribution. Austrian households, which are the most dramatic case, increase in overrepresentation along the three top wealth shares. However, this effect is mainly driven by heir households with factors ranging from
2 to 4 when moving from the top decile to the top percentile. A similar point can be made for other countries such as Belgium, Germany, Spain, and France. Interestingly, Portuguese heir households can be found to be exactly their population share in the Top 1%, while their non-heir counterparts are consistently underrepresented.

4.2 Getting Rich, Percentile by Percentile

The results presented above provide useful insights into the effects of inheritances on the propensity of a household to be among the richest European households. An in-depth analysis of the factors that lead to a higher position in the net wealth distribution takes a more holistic view on the topic. For this reason, we explicitly model the whole distribution in order to consider varying effects of income, bequests, and other covariates along the distribution. Previous studies have shown that such an approach needs to incorporate the non-linear nature of wealth data in the modelling procedure (Humer et al., 2015).

In this setup, we utilize quantile regressions and estimate two equations of the form,

\[
\text{CDF}_{\text{net wealth}} = \beta_0 + \beta_1 \text{Bequest} + \beta_2 \text{CDF}_{\text{Income}} + \beta_3 \text{Gender} + \beta_4 \text{Age} + \beta_5 \text{Age}^2 \\
+ \beta_6 \text{Tertiary Education} + \beta_7 \text{Retiree} + \beta_8 \text{Entrepreneur} + \varepsilon \tag{5}
\]

with

\[
\text{Bequest} = \begin{cases} 
\text{Dummy}_{\text{Bequest}} & (5a) \\
\text{CDF}_{\text{Bequest}} & (5b)
\end{cases}
\]

We are primarily interested in the effect of bequests and self-made income on a household’s position in the net wealth distribution, measured by the coefficients \(\beta_1\) and \(\beta_2\). With regard to inheritances, we estimate one specification with a dummy variable for the receipt of bequests (equation 5a) and one with the household’s position in the distribution of bequests (equation 5b). The latter is based on the capitalized value of inheritances assuming a fixed interest rate of 3% per annum. As a sensitivity check, we also varied the rate between 1% and 5% without causing substantial changes to our findings. These results are available upon request. Furthermore, both specifications control for a number of standard socio-economic characteristics for each household, which may affect the wealth position apart from income and inheritances. Since socio-economic variables are collected on an individual level in the HFCS, we assign the values of the survey reference persons to the households. These are gender, age, and tertiary education. We further include a quadratic age effect to test the permanent income hypothesis. Finally, our specification tries to capture two very distinct groups in the data, retirees and entrepreneurs. Since the specific coefficient estimates of these controls are not at the center of our analysis, we refrain from
interpreting them in detail and refer the interested reader to tables A.1 and A.2 in the Appendix.
In short, conditionally on being statistically significant all estimates match the expected sign.

The estimation procedure follows a split-sample approach where we estimate individual regressions for each country. This approach facilitates the comparison of coefficients between countries, since we avoid the need for purchasing-power corrections for wealth, income or inheritances and instead only rely on the internal (within-country) consistency of these variables. Furthermore, the focus on the CDF position for wealth, income and inheritances simplifies the interpretation of results, especially when addressing the relation of these factors to each other. Following the empirical literature, we exclude the bottom and top 5% to make our analysis more robust (Koenker, 2005).

Figure 3: Quantile Regression: Income CDF and Bequest Dummy

Figure 3 illustrates the parameters of interest of specification 5a, ie. the income CDF and the inheritance dummy across the distribution for all countries in our sample. Table A.1 in the Appendix provides the regression results for all variables for the baseline OLS estimation and selected quantiles of the quantile regression approach. With regard to the income distribution, the rise of one percentile in the income distribution is associated with OLS estimates of mostly around 0.4 percentiles in the wealth CDF (with the exception of the Netherlands), which is similar to the results of Fessler and Schürz (2015). The quantile regression approach reveals gains between 0.1 and 0.6 percentiles in the net wealth distribution. We observe an inverted “U” shape pattern which is consistent in all countries, however, the position and the shape of the “U” vary. This shape indicates that earned income contributes most to wealth accumulation in the broad middle of the net wealth distribution.

The results in Table A.1 reveal that the maximum contribution of income to the wealth position is reached in different quantiles across countries. While some countries, like Germany, Austria, Portugal or Slovenia reach the maximum around the median, we also find clearly diverging pat-
terns. A group of countries, namely the Netherlands, France, and Spain peaks around the bottom quartile of the distribution, so that income gains in the lower part of the distribution are connected with the highest gains in net wealth (in terms of the CDF). Contrary to this picture, some countries reach their highest contribution in the upper half of the distribution. Notably Greece and Slovakia approach the highest estimate of above $0 \times 4$ around the 75th percentile. Interestingly, the estimates for the Netherlands are consistently lower than for all other countries and partly even insignificant.

Concerning the bequest dummy variable, the effect on the net wealth position of households is considerably larger. The estimates almost reach values of a 25 percentile gain for heir households in Greece and Austria. As can be seen, the influence of inheritances varies considerable between countries and net wealth percentiles. For the bottom quartile, the effect of bequests ranges from roughly 10 to 23 percentiles in the net wealth distribution, in the top quartile the spread is 5 to 15 percentiles. Austria displays the strongest positive coefficients for the upper 70% of the distribution, thus receiving bequests is most beneficial for social advancement in Austria compared to other Eurozone countries.

![Figure 4: Quantile Regression: Income CDF and Bequest CDF](image)

Figure 4 presents results for specification 5b, where both income and bequests are included in terms of their CDF. For better comparability, the scale of the ordinate in both panels correspond in this graph. Again, the coefficients of the income CDF show the inverted “U” shape and are in general robust across both specifications, as can be seen in Table A.2.

However, the effect of the inheritance CDF on the net wealth position shows a different pattern. Overall we can note, that climbing one percentile in the distribution of inheritances contributes significantly more to household wealth than gaining one percentile in the income CDF. At the median, the coefficients for the income CDF range between $0 \times 23$ and $0 \times 55$, the significant estimates for the bequest CDF vary between $0 \times 55$ and $1 \times 17$ percentiles in the net wealth distribution.
Furthermore, it can be observed that the estimated coefficients in almost all countries display a decreasing trend, meaning that inheritances matter more at the bottom end of the net wealth distribution. Some countries showing higher contributions of income are at the lower end of the bequest estimates, like Slovenia and Spain. Others, like the Netherlands, Greece, Austria, and Portugal, continuously outperform other countries with regard to the contribution of inheritances to net wealth.

Figure 5: Quantile Regression: Ratio of Bequest to Income CDF Percentile Gain

The nature of the regression specifications allows us to easily compare the estimates for income and inheritances. The left panel of Figure 5 shows the relevance of inheritances as compared with the earned income. The values in this figure indicate how many percentiles a household would have to climb in the income CDF in order to compensate for the receipt of bequests. Greece exhibits the most extreme numbers, particularly in the lower part of the wealth distribution: households at the bottom would need to jump more than 200 percentiles in the income distribution to compensate an inheritance (see also Table A.3). In most countries, the ratios level off at coefficient ratios of well below 50 in the middle of the distribution. However, a value of 50 still means that a household would need to move up half of the income distribution to make up for the receipt of a bequest.

In the right panel of Figure 5, we compare the coefficients of income and bequests both expressed in terms of the CDF. Since both estimates return the change in net wealth quantiles given a change in the CDF position, the relative representation provides insights into how many income percentiles a household needs to compensate for a one percentile increase in the inheritance CDF. The figure therefore gives the relative the importance of income and inheritances in each country based on a common measurement scale. A value of one would therefore mean that bequests and earned income have an equally strong effect on the net wealth position, a value larger than one again attributes more importance to inheritances.

Below the 70th percentile, these ratios show a declining trend in the relative importance of
inheritances versus earnings on a household’s position in the net wealth distribution for most countries. For wealth quantiles slightly above the median, higher inheritances can be more easily compensated by (similarly) high income, since both have similar effects on the wealth CDF. However, as we approach the very top of distribution, the relative importance of bequests gains momentum again. This is a major advantage of our methodological approach, as compared to the study of Fessler and Schürz (2015): Only by relaxing the assumption of parameter homogeneity across wealth percentiles we are able to identify these diverse trends in the relative importance of bequests and income at different points in the wealth distribution.

In the lower part of the distribution, the countries with the highest ratios are the Netherlands (which arguably may be an outlier in the analysis), Greece and Portugal, followed by Austria. In these countries the wealth position increase from inheritances is much stronger than that of an improvement of the income position. This heterogeneity in the ratio decreases (with the exception of the Netherlands) along the distribution, so that starting from the median there are only small between-country differences. Summarizing, for most countries the ratio between the inheritance CDF and the income CDF gains is well above one throughout the distribution. However, there are two exceptions. For Slovakia the ratio approaches unity in the top decile, in Slovenia the ratio is already below one in the 44th percentile, meaning that an increase in income from employment is even more important than an increase in bequests. However, these eastern European countries have developed market-based economies only rather recently as compared to other countries in the sample. Therefore, the very distinct accumulation patterns we find for these countries have to be interpreted cautiously.

5 Conclusion

This paper analyzes the role of inheritances and earned income for the accumulation of wealth in the Eurozone. For a consistent analysis, HFCS data are adjusted for country-specific differences in the household structure and we control for socio-economic idiosyncrasies in the estimations. We use logit and quantile regression specifications to single out the effects of bequests and income on the households’ relative position in the net wealth distribution. With regard to our results, we are able to provide insights that address following questions: Which households are at the top of the Eurozone wealth distribution? How do inheritances affect the probability of getting to the top? What is the role of bequests and income from employment for wealth accumulation? How do these processes differ between the Eurozone countries?

Answering these research questions, we find that households from Austria, Belgium, and Germany are overrepresented in the top 1% of the Eurozone net wealth distribution according to their actual population share. While Spain and France are roughly represented closely around their population shares, smaller countries like Greece, Slovenia, and Slovakia are practically non-existent in the richest percentile. This implies that countries are by no means represented according to their population share. And even if a country is not overrepresented as a whole, this is only true